

Application Number 10/696,725

Amendment in response to Office Action mailed July 13, 2007

REMARKS

This Amendment is responsive to the Final Office Action dated July 13, 2007. Applicant has amended claims 8, 12, 18, 38, and 56. Claims 1, 2, 4-8, 10-23, 33-41, and 54-58 are pending, with claims 5-7, 15-17, and 35-37 withdrawn from consideration due to restriction.

Applicant respectfully requests entry of these claims amendments after issuance of the Final Office Action. Applicant submits that the claim amendments are to dependent claims and made for purposes of clarification and, therefore, relatively minor in character. Accordingly, the claim amendments should not raise new issues and should require no further search. Additionally, Applicant submits that the claim amendments place the claims in better form for appeal.

Information Disclosure Statement

The Office Action noted that the Information Disclosure Statement mentioned in Applicant's previous Amendment was not submitted with the previous Amendment. Applicant appreciates this reminder, and will resubmit the references not considered by the Examiner if there is an opportunity to do so.

Claim Rejection Under 35 U.S.C. §§ 102/103

The Final Office Action rejected claims 1, 2, 4, 8, 10, 11, 13, 14, 18, 19, 20, 22, 23, 33, 34, 38-40 and 54-58 under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Stomberg et al. (US 5,554,565, herein referred to as "Stomberg"). Applicant respectfully traverses the rejection. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Stomberg fails to disclose or suggest receiving stay-alive signals from a programming device at a watchdog unit coupled to the programming device during a programming session between the programming device and an implantable medical device, resetting a watchdog timer maintained by the watchdog unit in response to receipt of each of the stay-alive signals, and sending a signal from the watchdog unit to the implantable medical device via wireless telemetry

Application Number 10/696,725

Amendment in response to Office Action mailed July 13, 2007

to change a mode of operation of the implantable medical device in response to expiration of the watchdog timer, as required by independent claims 1, 13, and 33.

In support of the rejection of independent claims 1, 13, and 33, the Office Action stated that it is inherent that a "watchdog timer" is used to determine an interval of time in which no signals are received because utilizing a timer that determines a period wherein no pulses are received is the only way to determine a loss of digital signal. Alternatively, the Office Action argued that it is well known in the communication arts to utilize timers to establish a period of time having no received signal to determine a loss of signal and, therefore, would have been obvious to one of ordinary skill in the art at the time of the invention to provide Stomberg's invention with a timer to determine a loss of signal.

Stomberg does not disclose or suggest determining a period of time wherein no pulses are received as the Office Action asserts. Stomberg describes detecting interruption in communication between the programmer and the extender module. It does not necessarily follow that Stomberg is determining a period of time wherein no pulse are received, and instead may be, for example, monitoring data throughput, signal strength, etc.

Further, even if a timer were employed in the Stomberg system, nothing in Stomberg discloses or suggests using a watchdog timer, or resetting a timer, much less resetting a watchdog timer based on receipt of each of the stay-alive signals. There is simply no teaching in the prior art that would have suggested using a watchdog timer and resetting the watchdog timer, instead of any of a variety of other schemes for monitoring the amount of time between communications from the Stomberg programmer. For at least these reasons, Stomberg fails to disclose or suggest the requirements of independent claims 1, 13, and 33.

With respect to claims 4, 34, and 55, Stomberg fails to disclose or suggest receiving programming signals and stay-alive signals and resetting a watchdog timer in response to each of the programming signals and stay-alive signals. Stomberg describes a programmer that sends programming signals to an implantable medical device via an extender module. Stomberg does not disclose or suggest sending any other types of signals to the extender module. Applicant's specification, for example at paragraphs [0039], [0058], and [0060], describes dedicated stay-alive signals that may be provided upon execution of instruction of control software of the programmer. In some embodiments, a stay-alive signal is sent if no programming signal is sent

Application Number 10/696,725
Amendment in response to Office Action mailed July 13, 2007

in time to cause the watchdog unit to reset the watchdog timer. In this manner, the watchdog may be prevented from timing out inappropriately during a pause in a neurostimulation programming process. Stomberg does not disclose or suggest sending stay-alive signals.

In support of the rejection of claims 4, 34, and 55, the Office Action stated that the timer is reset for any and all signals received by the watchdog from the programmer. As described previously, Stomberg fails to disclose or suggest resetting a watchdog timer much less resetting a watchdog timer in response to each of the signals received by the watchdog. Further, Stomberg only contemplates sending programming signals, and does not disclose or suggest sending stay-alive signals. For at least these reasons, the applied references fail to disclose or suggest the requirements of claims 4, 34, and 55.

With respect to amended claims 8, 18, and 38, Stomberg fails to disclose or suggest sending a signal to an implantable medical device to cause the implantable medical device to revert to a program previously stored within a memory of the implantable medical device. Similarly, with respect to amended claim 56, Stomberg fails to disclose or suggest an implantable medical device comprising a memory to store a program that controls delivery of therapy by the implantable medical device and a watchdog unit that causes the implantable medical device to delivery therapy according to the program in response to expiration of the watchdog timer. Stomberg describes an extender module that stores an application proxy configured to transition the implantable medical device to a recovery state under certain conditions. Stomberg only contemplates storing the application proxy in the extender module and, therefore, fails to disclose or suggest reverting to a program previously stored within a memory of the implantable medical device, as required by claims 8, 18, 38, and 56.

Stomberg fails to disclose or suggest receiving power at a watchdog unit from a programming device, detecting a failure of power delivery by the programming device, activating an auxiliary power source of the watchdog unit in response to the detection, and sending a signal from the watchdog unit to the implantable medical device via wireless telemetry to change the mode of operation of the implantable medical device in response to the detection, as required by claims 11, 20, and 40.

In support of the rejections of claims 11, 20, and 40, the Office Action stated that the extender module receives power in the form of signals from the programming device and

Application Number 10/696,725

Amendment in response to Office Action mailed July 13, 2007

activates auxiliary power in the form of signal generation. However, Stomberg fails to disclose or suggest that the signals received by the extender module and the signals generated by the extender module relate to powering the extender module. In fact, Stomberg describes downlinking data (e.g., diagnostics, interrogations, and changes in operating parameters) from a programmer to an implantable medical device and uplinking data (e.g., ECG data and uplink telemetry waveform data) from an implantable medical device to a programmer via an extender module.¹ Stomberg lacks any disclosure suggestive of receiving power at a watchdog unit from a programming device or activating an auxiliary power source in response to a failure of power delivery by the programming device.

With respect to claim 23, Stomberg fails to disclose or suggest a programming device coupled to a programming head by a cable and a watchdog unit that couples the cable to the programming head. In support of the rejection of claim 23, the Office Action stated that Stomberg teaches that the extender module may be coupled to the programmer via a wired connection and the extender module may form the programming head. However, Applicant's claim 23 requires that the watchdog unit provide a coupling between the cable and the programming head. Stomberg fails to disclose or suggest a watchdog unit that couples a cable to a programming head.

For at least these reasons, the Final Office Action has failed to establish a prima facie case for non-patentability of Applicant's claims 1, 2, 4, 8, 10, 11, 13, 14, 18, 19, 20, 22, 23, 33, 34, 38-40 and 54-58 under 35 U.S.C. §§ 102(e) and 103(a). Withdrawal of these rejections is requested.

Claim Rejection Under 35 U.S.C. § 103

The Office Action rejected claims 12, 21, and 41 under 35 U.S.C. § 103(a) as being unpatentable over Stomberg. Applicant respectfully traverses the rejection. Each of claims 12, 21 and 41 depends from one of independent claims 1, 13, and 33. Claims 12, 21 and 41 are patentable over Stomberg for at least the reasons discussed above with reference to the independent claims.

¹ Stomberg, column 6, lines 4-7.

Application Number 10/696,725
Amendment in response to Office Action mailed July 13, 2007

CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims.

In view of the clear distinctions identified above between the current claims and the applied prior art, Applicant reserves further comment at this time regarding any other features of the independent or dependent claims. However, Applicant does not necessarily admit or acquiesce in any of the rejections or the Examiner's interpretations of the applied references. Applicant reserves the right to present additional arguments with respect to any of the independent or dependent claims.

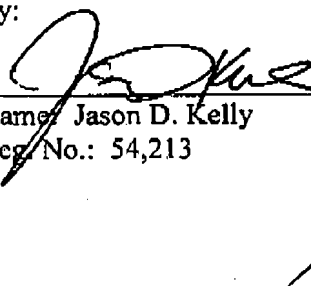
Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date:

9-13-07

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